

Table 11-1. Summary of Deterministic Baseline Ecological Risk Assessment Results for Portland Harbor for Chemical

| Assessment Endpoint | Measurement Endpoint | Line of Evidence in Support of Measurement Endpoint |
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| 1. Aquatic Plants | 1. Water exposure contaminant concentrations compared to AWQC or TRVs | 1. Surface water concentration compared to AWQC or TRVs |
| 1. Aquatic Plants | 1. Water exposure contaminant concentrations compared to AWQC or TRVs | 2. Transition zone water concentration compared to AWQC or TRVs |

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| 2. Benthic Macroinvertebrates | 1. Sediment toxicity testing to empirically assess adverse effects | Results presented in Table 11-? (results don't fit in this format). Survival and biomass of <i>Chironomus dilutus</i> in 10 day exposures, survival and biomass of <i>Hyalella azteca</i> in 28 day exposures |
| 2. Benthic Macroinvertebrates | 2. Interpretation of sediment toxicity tests using predictive models | 1. Floating percentile model |

2. Benthic Macroinvertebrates

2. Interpretation of sediment
toxicity tests using predictive
models

2. Logistic regression model

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| 2. Benthic Macroinvertebrates | 3. Water exposure contaminant concentrations compared to AWQC or TRVs | 1. Surface water concentration compared to AWQC or TRVs |
| 2. Benthic Macroinvertebrates | 3. Water exposure contaminant concentrations compared to AWQC or TRVs | 2. Transition zone water concentration compared to AWQC or TRVs |

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| 2. Benthic Macroinvertebrates | 4. Benthic macroinvertebrate tissue data (modeled, laboratory exposed or field collected) compared to tissue based TRVs | 1. Empirical (field-collected) whole body benthic macroinvertebrate concentration relative to tissue TRVs |
| 2. Benthic Macroinvertebrates | 4. Benthic macroinvertebrate tissue data (modeled, laboratory exposed or field collected) compared to tissue based TRVs | 2. Laboratory exposed worm (<i>Lumbriculus variegatus</i>) whole body concentrations relative to tissue TRVs |
| 2. Benthic Macroinvertebrates | 4. Benthic macroinvertebrate tissue data (modeled, laboratory exposed or field collected) compared to tissue based TRVs | 3. Empirical (field-collected) whole body epibenthic macroinvertebrate concentration (from Hester-Dendy samplers) relative to tissue TRVs |
| 2. Benthic Macroinvertebrates | 4. Benthic macroinvertebrate tissue data (modeled, laboratory exposed or field collected) compared to tissue based TRVs | 4. Predicted (BSAF or FWM) worm (<i>Lumbriculus variegatus</i>) whole body concentration relative to tissue TRVs |
| 2. Benthic Macroinvertebrates | 5. Bulk sediment contaminant concentrations compared to published non-site specific sediment quality guidelines (SQGs) | 1. Bulk sediment concentration compared to consensus based probable effect concentrations (PECs) |

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| 2. Benthic Macroinvertebrates | 5. Bulk sediment contaminant concentrations compared to published non-site specific sediment quality guidelines (SQGs) | 2. Bulk sediment concentration compared to mechanistic equilibrium partitioning (EqP) SQGs |
| 2. Benthic Macroinvertebrates | 5. Bulk sediment contaminant concentrations compared to published non-site specific sediment quality guidelines (SQGs) | 3. Bulk sediment concentration compared to empirical probable effect levels (PELs) |

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| <p>3. Bivalves</p> | <ol style="list-style-type: none"> 1. Bivalve tissue data (modeled, laboratory exposed or field collected) compared to tissue based TRVs 1. Empirical (field-collected) whole body concentration relative to tissue TRVs |
| <p>3. Bivalves</p> | <ol style="list-style-type: none"> 1. Bivalve tissue data (modeled, laboratory exposed or field collected) compared to tissue based TRVs 2. Laboratory exposed clam (<i>Corbicula fluminea</i>) whole body concentrations relative to tissue TRVs |
| <p>3. Bivalves</p> | <ol style="list-style-type: none"> 1. Bivalve tissue data (modeled, laboratory exposed or field collected) compared to tissue based TRVs 3. Predicted (BSAF or FWM) whole body concentration relative to tissue TRVs. For TBT, derive a site specific biota-sediment accumulation factor or use screening value based on sediment concentrations |
| <p>3. Bivalves</p> | <ol style="list-style-type: none"> 2. Sediment toxicity testing to empirically assess adverse effects Results presented in Table 11-? (results don't fit in this format). Survival of Corbicula in 28 day bioaccumulation tests recorded. <i>Hyalella</i> and <i>Chironomus</i> results used as bivalve surrogates. |

3. Bivalves

3. Water exposure contaminant concentrations compared to AWQC or TRVs

1. Surface water concentration compared to AWQC or TRV

3. Bivalves

3. Water exposure contaminant concentrations compared to AWQC or TRVs

2. Transition zone water concentration compared to AWQC or TRV

3. Bivalves

4. Bulk sediment contaminant concentrations compared to published non-site specific sediment quality guidelines
(SOGs)

1. Bulk sediment concentration compared to consensus based probable effect concentrations (PECs)

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| 3. Bivalves | 4. Bulk sediment contaminant concentrations compared to published non-site specific sediment quality guidelines <i>(SQGs)</i> | 2. Bulk sediment concentration compared to mechanistic equilibrium partitioning (EqP) SQGs |
| 3. Bivalves | 4. Bulk sediment contaminant concentrations compared to published non-site specific sediment quality guidelines <i>(SQGs)</i> | 3. Bulk sediment concentration compared to empirical probable effect levels (PELs) |

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| 4. Decapods | <ol style="list-style-type: none"> 1. Decapod tissue data (modeled, laboratory exposed or field collected) compared to tissue based TRVs | <ol style="list-style-type: none"> 1. Empirical (field-collected) whole body concentration relative to tissue TRVs |
| 4. Decapods | <ol style="list-style-type: none"> 1. Decapod tissue data (modeled, laboratory exposed or field collected) compared to tissue based TRVs | <ol style="list-style-type: none"> 2. Predicted (BSAF or FWM) whole body concentration relative to tissue TRVs. For TBT, derive a site specific biota-sediment accumulation factor or use screening value based on sediment concentrations |
| 4. Decapods | <ol style="list-style-type: none"> 2. Bulk sediment contaminant concentrations compared to published non-site specific sediment quality guidelines (SQGs) | <ol style="list-style-type: none"> 1. Bulk sediment concentration compared to consensus based probable effect concentrations (PECs) |

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| 4. Decapods | 2. Bulk sediment contaminant concentrations compared to published non-site specific sediment quality guidelines (SQGs) | 2. Bulk sediment concentration compared to mechanistic equilibrium partitioning (EqP) SQGs |
| 4. Decapods | 2. Bulk sediment contaminant concentrations compared to published non-site specific sediment quality guidelines (SQGs) | 3. Bulk sediment concentration compared to empirical probable effect levels (PELs) |

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| 4. Decapods | 3. Water exposure contaminant concentrations compared to AWQC or TRVs | 1. Surface water concentration compared to AWQC or TRV |
| 4. Decapods | 3. Water exposure contaminant concentrations compared to AWQC or TRVs | 2. Transition zone water concentration compared to AWQC or TRV |

5. Invertivorous fish

1. Water exposure contaminant concentrations compared to AWQC or TRVs
1. Surface water concentration compared to AWQC or TRV

5. Invertivorous fish
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| 1. Water exposure contaminant concentrations compared to AWQC or TRVs | 2. Transition zone water concentration compared to AWQC or TRV (applies to sculpin species only within this assessment endpoint) |
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| 5. Invertivorous fish | 2. Fish tissue data (modeled or field collected) compared to tissue based TRVs | 1. Empirical (field-collected) fish whole body concentration relative to tissue TRVs |
| 5. Invertivorous fish | 2. Fish tissue data (modeled or field collected) compared to tissue based TRVs | 2. Predicted (BSAF or FWM) fish whole body concentration relative to tissue TRVs (applies to sculpin species only within this assessment endpoint) |
| 5. Invertivorous fish | 3. Ingested dietary dose of contaminants compared to dietary TRVs | 1. Dietary dose compared to dietary TRVs |

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| <p>5. Invertivorous fish</p> | <p>3. Ingested dietary dose of contaminants compared to dietary TRVs</p> <p>2. Dietary dose compared to dietary TRVs to also include stomach content data or other approaches refined specifically for PAHs (juvenile Chinook salmon only)</p> |
| <p>6. Omnivorous fish</p> | <p>1. Water exposure contaminant concentrations compared to AWQC or TRVs</p> <p>1. Surface water concentration compared to AWQC or TRV</p> |
| <p>6. Omnivorous fish</p> | <p>2. Fish tissue data (modeled or field collected) compared to tissue based TRVs</p> <p>1. Empirical (field-collected) fish whole body concentration relative to tissue TRVs</p> |
| <p>6. Omnivorous fish</p> | <p>2. Fish tissue data (modeled or field collected) compared to tissue based TRVs</p> <p>2. Tissue-based TRV approach for dioxin-like contaminants using literature values and incorporating toxic equivalents (TEQs) based on the World Health Organization toxic equivalent factors (TEFs). Risk from other compounds assessed in uncertainty analysis (chemical specific, carp only).</p> |
| <p>6. Omnivorous fish</p> | <p>3. Ingested dietary dose of contaminants compared to dietary TRVs</p> <p>1. Dietary dose compared to dietary TRVs</p> |

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| 6. Omnivorous fish | 4. Fish condition or incidence of lesions (primarily for PAHs) | 1. Compare lesion incidence to areas of contamination and/or lesion-based TRVs (if relevant to receptor species) |
| 7. Piscivorous fish | 1. Water exposure contaminant concentrations compared to AWQC or TRVs | 1. Surface water concentration compared to AWQC or TRV |
| 7. Piscivorous fish | 2. Fish tissue data (modeled or field collected) compared to tissue based TRVs | 1. Empirical (field-collected) fish whole body concentration relative to tissue TRVs |
| 7. Piscivorous fish | 2. Fish tissue data (modeled or field collected) compared to tissue based TRVs | 2. Predicted (BSAF or FWM) whole body concentration relative to tissue TRVs (Smallmouth bass only) |
| 7. Piscivorous fish | 3. Ingested dietary dose of contaminants compared to dietary TRVs | 1. Dietary dose compared to dietary TRVs |
| 8. Detritivorous fish | 1. Water exposure contaminant concentrations compared to AWQC or TRVs | 1. Surface water concentration compared to AWQC or TRV |

8. Detritivorous fish
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| 1. Water exposure contaminant concentrations compared to AWQC or TRVs | 2. Transition zone water concentration compared to AWQC or TRV |
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| 8. Detritivorous fish | 1. Water exposure contaminant concentrations compared to AWQC or TRVs | 3. Laboratory 96 hour LC ₅₀ measurements for Pacific lamprey ammocoetes exposed to 6 chemicals individually in laboratory water |
| 8. Detritivorous fish | 2. Fish tissue contaminant data compared to tissue based TRVs | 1. Pacific lamprey ammocoete whole body tissue |
| 9. Amphibians | 1. Water exposure contaminant concentrations compared to AWQC or TRVs | 1. Surface water concentration compared to AWQC or TRVs |

9. Amphibians
1. Water exposure contaminant concentrations compared to AWQC or TRVs
 2. Transition zone water concentration compared to AWQC or TRVs

10. Piscivorous birds
1. Ingested dietary dose of contaminants compared to dietary TRVs
 1. Osprey
 1. Ingested dietary dose of contaminants compared to dietary TRVs
 2. Bald eagle

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| 10. Piscivorous birds | 2. Egg contaminant concentrations compared to egg tissue TRVs | 1. Osprey |
| 10. Piscivorous birds | 2. Egg contaminant concentrations compared to egg tissue TRVs | 2. Bald eagle |
| 11. Omnivorous birds | 1. Ingested dietary dose of contaminants compared to dietary TRVs | 1. Hooded merganser |
| 12. Invertivorous birds | 1. Ingested dietary dose of contaminants compared to dietary TRVs | 1. Spotted sandpiper |
| 13. Aquatic dependent mammals | 1. Ingested dietary dose of contaminants compared to dietary TRVs | 1. Mink |
| 13. Aquatic dependent mammals | 1. Ingested dietary dose of contaminants compared to dietary TRVs | 2. River otter |

| Chemical | Number of samples with HQ ≥ 1.0 / Total number of samples | Maximum HQ Value | Location(s) with highest HQ's |
|--|---|------------------|--|
| Naphthalene | 10 of 268 | 50 | River mile 5.5 to 6.5 |
| Total DDX | 35 of 170 (1 of 170) | 20 (1.8) | River mile 1.5 to 2.5, river mile 5.5 to 9.5 |
| Benzo(a)pyrene | 3 of 245 | 14 | River mile 5.5 to 6.5 |
| Benzo(a)anthracene | 2 of 245 | 10 | River mile 5.5 to 6.5 |
| 4,4'-DDT | 19 of 170 (0 of 170) | 4.7 (0.43) | River mile 5.5 to 9.5 |
| Trichloroethene | 1 of 23 | 4.1 | River mile 6.5 to 7.5 |
| bis(2-ethylhexyl)phthalate | 2 of 190 | 2.3 | River mile 3.5 to 4.5 |
| Ethylbenzene | 1 of 23 | 1.6 | River mile 6.5 to 7.5 |
| Monobutyltin | 1 of 167 | 1.2 | River mile 10.5 to 11.8 |
| Total PCB | 2 of 160 (0 of 160) | 1.2 (0.089) | River mile 6.5 to 7.5 |
| Zinc | 1 of 167 | 1.1 | River mile 9.5 to 10.5 |
| | | | |
| Total DDX | 8 of 12 (8 of 12) | 3100 (280) | Arkema acid plant area |
| 4,4'-DDT | 3 of 12 (3 of 12) | 1800 (160) | Arkema acid plant area |
| Barium | 49 of 49 | 1100 | Arkema chlorate plant area |
| Carbon disulfide | 1 of 56 | 870 | Gasco |
| Manganese | 49 of 49 | 550 | Arkema chlorate plant area |
| Iron | 46 of 49 | 250 | Arkema chlorate plant area |
| Chlorobenzene | 2 of 56 | 190 | Arkema acid plant area |
| Gasoline fraction (aliphatic): C ₁₀ - C ₁₂ | 12 of 22 | 100 | Gasco |
| Naphthalene | 5 of 72 | 57 | |
| Sodium | 9 of 49 | 55 | Arkema chlorate plant area |
| Cyanide | 1 of 2 | 23 | |
| Chloroform | 2 of 56 | 21 | |
| Perchlorate | 3 of 17 | 19 | Arkema chlorate plant area |
| Benzo(a)pyrene | 8 of 37 | 15 | |
| Zinc | 1 of 30 | 14 | ARCO |
| Benzo(a)anthracene | 9 of 37 | 8.5 | |
| Magnesium | 6 of 49 | 7.0 | Arkema acid plant area |
| Cadmium | 6 of 30 | 5.8 | Rhône Poulenc |
| Phenanthrene | 7 of 37 | 4.6 | |
| Fluorene | 6 of 37 | 4.6 | |
| Ethylbenzene | 1 of 56 | 4.5 | |
| Potassium | 2 of 49 | 3.7 | |
| Anthracene | 3 of 37 | 3.6 | |
| Chloroethane | 1 of 56 | 3.4 | |

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| 2-methylnaphthalene | 3 of 37 | 3.4 |
| Acenaphthene | 2 of 37 | 3.3 |
| Lead | 2 of 30 | 3.0 |
| Toluene | 1 of 56 | 2.9 |
| 1,2,4-Trimethylbenzene | 1 of 5 | 2.0 |
| 1,2-Dichlorobenzene | 1 of 56 | 1.9 |
| Nickel | 2 of 30 | 1.6 |
| Isopropylbenzene | 1 of 56 | 1.3 |
| Gasoline fraction (aliphatic): C ₄ - C ₆ | 2 of 22 | 1.3 |
| Copper | 1 of 22 | 1.3 |

Response based on 10 or 28 day exposure to chemical mixtures, *Hyalella* and *Chironomus* toxicity tests not designed to identify individual chemicals posing potentially unacceptable risk

NA NA

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| Total LPAH | 143 of 1183 (Level 2 Hyalella biomass) | 1800 |
| Sum DDT's | 110 of 899 (Level 2 Hyalella biomass) | 760 |
| Mercury | 58 of 1109 (Level 3 Hyalella biomass) | 280 |
| Total HPAH | 72 of 1183 (Level 2 Chironomus biomass) | 200 |
| | 40 of 851 (Level 3 Chironomus biomass) | |
| Total endosulfan | 46 of 1088 (Level 2 Chironomus survival) | 190 |
| Dibenzofuran | 23 of 990 (Level 2 Hyalella biomass) | 180 |
| Benzyl alcohol | 38 of 1046 (Level 2 Hyalella biomass) | 170 |
| Phenol | 127 of 1126 (Level 2 Chironomus survival) | 98 |
| Cadmium | 12 of 848 (Level 2 Hyalella biomass) | 91 |
| δ-HCH | 42 of 198 (Level 2 Hyalella biomass) | 79 |
| Sulfide | 31 of 908 (Level 2 Chironomus biomass) | 64 |
| Total PCB | 160 of 1047 (Level 3 Chironomus biomass) | 62 |
| 4-methylphenol | | 54 |

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| Silver | 359 of 1110 (Level 2 Hyalella biomass) | 52 |
| Carbazole | 16 of 993 (Level 2 Chironomus survival) | 29 |
| | 28 of 900 (Level 2 Chironomus biomass) | |
| Sum DDD's | 4 of 851 (All Level 2 and Chironomus biomass) | 27 |
| Endrin ketone | 4 of 851 (All Level 2 and Level 3 endpoints) | 24 |
| Chromium | 63 of 1122 (Level 3 Hyalella biomass) | 17 |
| Dieldrin | 2 of 846 (All Level 2 and Level 3 endpoints) | 17 |
| Endrin | 2 of 700 (Level 2 Chironomus survival) | 9.7 |
| β-HCH | 4 of 851 (All Level 2 and Level 3 endpoints) | 9.2 |
| Copper | 15 of 1122 (Level 2 Chironomus biomass) | 7.9 |
| Ammonia | 92 of 200 (Level 2 Hyalella biomass) | 3.0 |
| Sum DDE's | 2 of 897 (All Level 2 and Level 3 endpoints) | 2.8 |
| Anthracene | 48 of 1183 (Level 2 toxicity) | 210 |
| 2-methylnaphthalene | 25 of 1113 (Level 2 toxicity) | 140 |
| Lead | 24 of 1136 (Level 2 toxicity) | 53 |
| Carbazole | 26 of 993 (Level 2 toxicity) | 46 |
| cis-Chlordane | 6 of 851 (Level 2 toxicity) | 39 |
| Total PAH | 27 of 1183 (Level 2 toxicity) | 20 |
| Total LPAH | 23 of 1183 (Level 2 toxicity) | 18 |
| Diesel range organics | 25 of 533 (Level 2 toxicity) | 17 |
| Total PCB | 1 of 908 (Level 2 toxicity) | 12 |
| Sum DDE's | 7 of 897 (Level 2 toxicity) | 12 |
| Tributyltin | 5 of 222 (Level 2 toxicity) | 11 |

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|------------------------|--------------------------------|-----|----------------------------------|
| 4,4'-DDT | 14 of 889 (Level 2 toxicity) | 10 | |
| Sulfide | 4 of 198 (Level 2 toxicity) | 9.8 | Sulfide data not included in BER |
| Dibenzofuran | 17 of 1088 (Level 2 toxicity) | 9.5 | |
| Fluorene | 20 of 1183 (Level 2 toxicity) | 9.1 | |
| Total DDx | 11 of 900 (Level 2 toxicity) | 8.0 | |
| 2,4'-DDD | 10 of 844 (Level 2 toxicity) | 6.8 | |
| Acenaphthene | 16 of 1183 (Level 2 toxicity) | 6.6 | |
| Sum DDD's | 10 of 900 (Level 2 toxicity) | 6.2 | |
| 4,4'-DDD | 6 of 900 (Level 2 toxicity) | 5.9 | |
| Copper | 10 of 1122 (Level 2 toxicity) | 5.3 | |
| Phenol | 6 of 1046 (Level 2 toxicity) | 5.2 | |
| Silver | 119 of 1110 (Level 2 toxicity) | 4.9 | |
| Benzo(a)anthracene | 9 of 1183 (Level 2 toxicity) | 4.6 | |
| 4,4'-DDE | 3 of 897 (Level 2 toxicity) | 4.5 | |
| Chrysene | 10 of 1183 (Level 2 toxicity) | 4.3 | |
| Dibenzo(a,h)anthracene | 11 of 1183 (Level 2 toxicity) | 4.2 | |
| Phenanthrene | 12 of 1183 (Level 2 toxicity) | 4.2 | |
| Fluoranthene | 12 of 1183 (Level 2 toxicity) | 4.1 | |
| Benzo(b)fluoranthene | 9 of 1067 (Level 2 toxicity) | 4.0 | |
| Total HPAH | 9 of 1183 (Level 2 toxicity) | 3.9 | |
| Benzo(g,h,i)perylene | 10 of 1183 (Level 2 toxicity) | 3.8 | |
| Indeno(1,2,3-cd)pyrene | 9 of 1183 (Level 2 toxicity) | 3.8 | |

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| Mercury | 22 of 1109 (Level 2 toxicity) | 3.5 | |
| Pyrene | 8 of 1183 (Level 2 toxicity) | 3.3 | |
| Benzo(k)fluoranthene | 16 of 1033 (Level 2 toxicity) | 3.2 | |
| Acenaphthylene | 8 of 1183 (Level 2 toxicity) | 2.8 | |
| Dibutyl phthalate | 0 of 1120 (Level 2 toxicity) | 2.8 | BERA Table 6-13 shows no HQ > |
| Chromium | 10 of 1122 (Level 2 toxicity) | 2.7 | |
| δ-HCH | 5 of 848 (Level 2 toxicity) | 2.5 | |

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|----------------------------|----------------------|-------------|--|
| Naphthalene | 10 of 268 | 50 | River mile 5.5 to 6.5 |
| Total DDx | 35 of 170 (1 of 170) | 20 (1.8) | River mile 1.5 to 2.5, river mile 5.5 to 9.5 |
| Benzo(a)pyrene | 3 of 245 | 14 | River mile 5.5 to 6.5 |
| Benzo(a)anthracene | 2 of 245 | 10 | River mile 5.5 to 6.5 |
| 4,4'-DDT | 19 of 170 (0 of 170) | 4.7 (0.43) | River mile 5.5 to 9.5 |
| Trichloroethene | 1 of 23 | 4.1 | River mile 6.5 to 7.5 |
| bis(2-ethylhexyl)phthalate | 2 of 190 | 2.3 | River mile 3.5 to 4.5 |
| Ethylbenzene | 1 of 23 | 1.6 | River mile 6.5 to 7.5 |
| Monobutyltin | 1 of 167 | 1.2 | River mile 10.5 to 11.8 |
| Total PCB | 2 of 160 (0 of 160) | 1.2 (0.089) | River mile 6.5 to 7.5 |
| Zinc | 1 of 167 | 1.1 | River mile 9.5 to 10.5 |

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| Cyanide | 34 of 34 | 4400 | Gasco |
| Total DDx | 10 of 14 | 3100 (280) | Arkema acid plant area |
| Benzo(a)pyrene | 34 of 102 | 2700 | Siltronic |
| Trichloroethene | 2 of 136 | 1900 | Siltronic |
| 4,4'-DDT | 3 of 14 | 1800 (160) | Arkema acid plant area |
| 4,4'-DDD | 6 of 14 | 1300 | Arkema acid plant area |
| Benzo(a)anthracene | 31 of 102 | 1200 | Siltronic |
| Barium | 93 of 93 | 1100 | Arkema chlorate plant area |
| Naphthalene | 31 of 149 | 1100 | Siltronic |
| 2,4-DDD | 10 of 14 | 1100 | Arkema acid plant area |
| Carbon disulfide | 4 of 136 | 870 | Gasco |
| Manganese | 105 of 106 | 550 | Arkema chlorate plant area |
| Gasoline fraction (aliphatic): C ₁₀ - C ₁₂ | 36 of 68 | 540 | Gasco |
| Iron | 101 of 106 | 250 | Arkema chlorate plant area |
| Chlorobenzene | 3 of 136 | 190 | Arkema acid plant area |

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| 4,4'-DDE | 3 of 14 | 120 | Arkema acid plant area |
| cis-1,2-Dichloroethene | 5 of 136 | 110 | Siltronic |
| 2,4-DDT | 3 of 14 | 93 | Arkema acid plant area |
| Anthracene | 28 of 102 | 87 | Siltronic |
| Benzo(g,h,i)perylene | 13 of 102 | 66 | Siltronic |
| Indeno(1,2,3-cd)pyrene | 13 of 102 | 61 | Siltronic |
| Phenanthrene | 36 of 102 | 57 | Siltronic |
| Ethylbenzene | 15 of 136 | 57 | Siltronic |
| Sodium | 11 of 93 | 55 | Arkema chlorate plant area |
| Benzo(b)fluoranthene | 13 of 102 | 49 | Siltronic |
| 1,2-Dichlorobenzene | 5 of 136 | 46 | Rhône Poulenc |
| 2-methylnaphthalene | 11 of 89 | 40 | Gasco |
| Total xylenes | 13 of 136 | 34 | Siltronic |
| Benzene | 9 of 136 | 30 | Siltronic |
| Fluorene | 36 of 102 | 28 | Siltronic |
| Chloroform | 4 of 136 | 21 | Arkema acid plant area |
| Vanadium | 6 of 13 | 19 | Siltronic |
| Perchlorate | 5 of 21 | 19 | Arkema chlorate plant area |
| Toluene | 11 of 136 | 18 | Siltronic |
| Acenaphthene | 24 of 102 | 17 | Siltronic |
| Chrysene | 10 of 102 | 17 | Siltronic |
| Fluoranthene | 11 of 102 | 17 | Siltronic |
| 1,4-Dichlorobenzene | 2 of 128 | 16 | Rhône Poulenc |
| Pyrene | 11 of 102 | 15 | Siltronic |
| Zinc | 1 of 55 | 14 | ARCO |
| Benzo(k)fluoranthene | 10 of 102 | 14 | Siltronic |
| Dibenzo(a,h)anthracene | 8 of 102 | 13 | Siltronic |
| o-Xylene | 12 of 136 | 12 | Siltronic |
| 1,2,4-Trimethylbenzene | 11 of 41 | 9.6 | Siltronic |
| Gasoline fraction (aliphatic): C ₄ - C ₆ | 15 of 68 | 7.3 | Gasco |
| Magnesium | 8 of 106 | 7.0 | Arkema acid plant area |
| Cadmium | 10 of 55 | 5.8 | Rhône Poulenc |
| m,p-Xylene | 3 of 136 | 4.4 | Siltronic |
| Gasoline fraction (aliphatic): C ₆ - C ₈ | 7 of 62 | 4.3 | Gasco |
| Potassium | 2 of 93 | 3.7 | Arkema chlorate plant area |
| Cobalt | 3 of 13 | 3.6 | Siltronic |
| Chloroethane | 1 of 136 | 3.4 | Gunderson |
| Lead | 4 of 55 | 3.0 | Mobil Oil |
| 1,3,5-Trimethylbenzene | 5 of 41 | 3.0 | Siltronic |
| Gasoline fraction (aromatic): C ₈ - C ₁₀ | 3 of 68 | 2.7 | Gasco |
| Dibenzofuran | 3 of 89 | 2.2 | Gasco |
| Beryllium | 3 of 93 | 2.0 | Willbridge |
| Isopropylbenzene | 10 of 136 | 2.0 | Siltronic |
| Nickel | 3 of 55 | 1.6 | Arkema chlorate plant area |
| 1,1-Dichloroethene | 2 of 136 | 1.6 | Siltronic |

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|---|-------------|------|----------------------------------|
| Copper | 1 of 45 | 1.3 | Rhône Poulenc |
| No data presented, but could screen epibenthic inverts from Hester-Dendy samplers (2 to 7 samples available, depending on chemical) | NA | NA | |
| Tributyltin | 1 of 35 | 11 | |
| Total PCB | 8 of 35 | 7.5 | |
| Total DDx | 2 of 35 | 3.2 | |
| Copper | 1 of 35 | 2.6 | |
| Arsenic | 2 of 35 | 1.5 | |
| Zinc | 27 of 35 | 1.3 | |
| 4,4'-DDD | 1 of 35 | 1.2 | |
| None | 0 of 2 | NA | |
| Tributyltin | 27 of 272 | 150 | |
| Total PCB | 15 of 1100 | 19 | |
| Total DDx | 15 of 1128 | 10 | |
| Phenanthrene | 145 of 1439 | 1500 | This line of evidence has no tab |
| Pyrene | 180 of 1439 | 860 | |
| Fluoranthene | 136 of 1439 | 540 | |
| Anthracene | 81 of 1439 | 460 | |
| Fluorene | 85 of 1439 | 410 | |
| Total PAH | 104 of 1439 | 320 | |
| Benzo(a)anthracene | 131 of 1439 | 300 | |
| Chrysene | 144 of 1439 | 290 | |
| Benzo(a)pyrene | 121 of 1439 | 230 | |
| Sum DDT's | 89 of 1154 | 210 | |
| Naphthalene | 52 of 1440 | 180 | |

| | | |
|--------------------------|-------------|-----|
| Sum DDD's | 119 of 1155 | 110 |
| Lead | 49 of 1392 | 100 |
| Lindane (γ -HCH) | 29 of 1107 | 86 |
| Sum DDE's | 52 of 1152 | 81 |
| Mercury | 3 of 1365 | 62 |
| Total PCB | 48 of 1163 | 46 |
| Total Chlordane | 43 of 1106 | 40 |
| Total DDx | 38 of 1155 | 28 |
| Copper | 66 of 1378 | 19 |
| Nickel | 30 of 1376 | 12 |
| Cadmium | 7 of 1382 | 9.3 |
| Chromium | 20 of 1378 | 7.0 |
| Zinc | 38 of 1392 | 6.2 |
| Heptachlor epoxide | 1 of 1107 | 6.2 |
| Dieldrin | 1 of 1107 | 5.8 |
| Arsenic | 8 of 1390 | 2.3 |

Not evaluated in BERA

| | | | |
|--------------------------|-------------|------|----------------------------------|
| Acenaphthene | 256 of 1439 | 4800 | This line of evidence has no tab |
| Phenanthrene | 256 of 1439 | 3300 | |
| Sum DDT's | 301 of 1154 | 2700 | |
| Anthracene | 156 of 1439 | 1600 | |
| Fluorene | 163 of 1439 | 1500 | |
| Pyrene | 266 of 1439 | 1500 | |
| Benzo(a)anthracene | 253 of 1439 | 830 | |
| Fluoranthene | 135 of 1439 | 510 | |
| Benzo(a)pyrene | 198 of 1439 | 430 | |
| Chrysene | 187 of 1439 | 430 | |
| Acenaphthylene | 111 of 1439 | 420 | |
| Sum DDE's | 142 of 1152 | 370 | |
| Sum DDD's | 250 of 1155 | 360 | |
| Lindane (γ -HCH) | 92 of 1107 | 310 | |
| 2-methylnaphthalene | 66 of 1369 | 260 | |
| Naphthalene | 66 of 1440 | 260 | |
| Dibenzo(a,h)anthracene | 167 of 1439 | 190 | |
| Lead | 76 of 1392 | 150 | |
| Mercury | 21 of 1365 | 130 | |
| Total Chlordane | 68 of 1106 | 79 | |

| | | | |
|---------------------------|------------|-----|---------------------------------|
| Dieldrin | 10 of 1107 | 53 | |
| Heptachlor epoxide | 11 of 1107 | 36 | |
| Nickel | 52 of 1376 | 17 | |
| Copper | 49 of 1378 | 14 | |
| Cadmium | 8 of 1382 | 13 | |
| Chlordane (cis and trans) | 1 of 188 | 9.8 | |
| Zinc | 80 of 1392 | 9.0 | |
| Chromium | 30 of 1378 | 8.6 | |
| Aroclor 1254 | 24 of 1154 | 6.5 | |
| Arsenic | 17 of 1390 | 4.4 | |
| Total DDx | 7 of 1155 | 3.6 | |
| Endrin | 11 of 1107 | 3.2 | Mistake in BERA Table 6-20, end |

| | | | |
|---------------------------|----------|-----|---|
| Tributyltin (field clams) | 1 of 34 | 3.5 | River mile 8.1, mouth of Swan Island Lagoon |
| Zinc (field clams) | 34 of 38 | 2.2 | Sitewide, with maximum at river mile 8.1 |
| Total PCB (field clams) | 1 of 41 | 2.0 | River mile 6.7 |
| Copper (field clams) | 32 of 38 | 1.8 | Sitewide, with maximum at river mile 8.1 |
| Zinc (field mussels) | 5 of 7 | 1.7 | River mile 7.8 |

| | | | |
|----------------------------|---------|-----|---|
| Tributyltin | 1 of 35 | 4.5 | River mile 8.1, mouth of Swan Island Lagoon |
| bis(2-ethylhexyl)phthalate | 1 of 35 | 2.8 | River mile 8.8 east |
| Total DDx | 1 of 35 | 2.2 | River mile 7.2 west |

| | | |
|-----------|------------|-----|
| Total PCB | 5 of 1100 | 12 |
| Total DDx | 12 of 1128 | 6.7 |

Response based on 28 day exposure to chemical mixtures, *Corbicula fluminea* bioaccumulation tests not designed to identify individual chemicals posing potentially unacceptable risk NA NA No unacceptable mortality

| | | | |
|----------------------------|----------------------|-------------|--|
| Naphthalene | 10 of 268 | 50 | River mile 5.5 to 6.5 |
| Total DDx | 35 of 170 (1 of 170) | 20 (1.8) | River mile 1.5 to 2.5, river mile 5.5 to 9.5 |
| Benzo(a)pyrene | 3 of 245 | 14 | River mile 5.5 to 6.5 |
| Benzo(a)anthracene | 2 of 245 | 10 | River mile 5.5 to 6.5 |
| 4,4'-DDT | 19 of 170 (0 of 170) | 4.7 (0.43) | River mile 5.5 to 9.5 |
| Trichloroethene | 1 of 23 | 4.1 | River mile 6.5 to 7.5 |
| bis(2-ethylhexyl)phthalate | 2 of 190 | 2.3 | River mile 3.5 to 4.5 |
| Ethylbenzene | 1 of 23 | 1.6 | River mile 6.5 to 7.5 |
| Monobutyltin | 1 of 167 | 1.2 | River mile 10.5 to 11.8 |
| Total PCB | 2 of 160 (0 of 160) | 1.2 (0.089) | River mile 6.5 to 7.5 |
| Zinc | 1 of 167 | 1.1 | River mile 9.5 to 10.5 |

| | | | |
|--|------------|------------|----------------------------|
| Cyanide | 34 of 34 | 4400 | Gasco |
| Total DDx | 10 of 14 | 3100 (280) | Arkema acid plant area |
| Benzo(a)pyrene | 34 of 102 | 2700 | Siltronic |
| Trichloroethene | 2 of 136 | 1900 | Siltronic |
| 4,4'-DDT | 3 of 14 | 1800 (160) | Arkema acid plant area |
| 4,4'-DDD | 6 of 14 | 1300 | Arkema acid plant area |
| Benzo(a)anthracene | 31 of 102 | 1200 | Siltronic |
| Barium | 93 of 93 | 1100 | Arkema chlorate plant area |
| Naphthalene | 31 of 149 | 1100 | Siltronic |
| 2,4-DDD | 10 of 14 | 1100 | Arkema acid plant area |
| Carbon disulfide | 4 of 136 | 870 | Gasco |
| Manganese | 105 of 106 | 550 | Arkema chlorate plant area |
| Gasoline fraction (aliphatic): C ₁₀ - C ₁₂ | 36 of 68 | 540 | Gasco |
| Iron | 101 of 106 | 250 | Arkema chlorate plant area |
| Chlorobenzene | 3 of 136 | 190 | Arkema acid plant area |
| 4,4'-DDE | 3 of 14 | 120 | Arkema acid plant area |
| cis-1,2-Dichloroethene | 5 of 136 | 110 | Siltronic |
| 2,4-DDT | 3 of 14 | 93 | Arkema acid plant area |
| Anthracene | 28 of 102 | 87 | Siltronic |
| Benzo(g,h,i)perylene | 13 of 102 | 66 | Siltronic |
| Indeno(1,2,3-cd)pyrene | 13 of 102 | 61 | Siltronic |
| Phenanthrene | 36 of 102 | 57 | Siltronic |
| Ethylbenzene | 15 of 136 | 57 | Siltronic |
| Sodium | 11 of 93 | 55 | Arkema chlorate plant area |
| Benzo(b)fluoranthene | 13 of 102 | 49 | Siltronic |
| 1,2-Dichlorobenzene | 5 of 136 | 46 | Rhône Poulenc |
| 2-methylnaphthalene | 11 of 89 | 40 | Gasco |
| Total xylenes | 13 of 136 | 34 | Siltronic |
| Benzene | 9 of 136 | 30 | Siltronic |

| | | | |
|--|-----------|-----|----------------------------|
| Fluorene | 36 of 102 | 28 | Siltronic |
| Chloroform | 4 of 136 | 21 | Arkema acid plant area |
| Vanadium | 6 of 13 | 19 | Siltronic |
| Perchlorate | 5 of 21 | 19 | Arkema chlorate plant area |
| Toluene | 11 of 136 | 18 | Siltronic |
| Acenaphthene | 24 of 102 | 17 | Siltronic |
| Chrysene | 10 of 102 | 17 | Siltronic |
| Fluoranthene | 11 of 102 | 17 | Siltronic |
| 1,4-Dichlorobenzene | 2 of 128 | 16 | Rhône Poulenc |
| Pyrene | 11 of 102 | 15 | Siltronic |
| Zinc | 1 of 55 | 14 | ARCO |
| Benzo(k)fluoranthene | 10 of 102 | 14 | Siltronic |
| Dibenzo(a,h)anthracene | 8 of 102 | 13 | Siltronic |
| o-Xylene | 12 of 136 | 12 | Siltronic |
| 1,2,4-Trimethylbenzene | 11 of 41 | 9.6 | Siltronic |
| Gasoline fraction (aliphatic): C ₄ - C ₆ | 15 of 68 | 7.3 | Gasco |
| Magnesium | 8 of 106 | 7.0 | Arkema acid plant area |
| Cadmium | 10 of 55 | 5.8 | Rhône Poulenc |
| m,p-Xylene | 3 of 136 | 4.4 | Siltronic |
| Gasoline fraction (aliphatic): C ₆ - C ₈ | 7 of 62 | 4.3 | Gasco |
| Potassium | 2 of 93 | 3.7 | Arkema chlorate plant area |
| Cobalt | 3 of 13 | 3.6 | Siltronic |
| Chloroethane | 1 of 136 | 3.4 | Gunderson |
| Lead | 4 of 55 | 3.0 | Mobil Oil |
| 1,3,5-Trimethylbenzene | 5 of 41 | 3.0 | Siltronic |
| Gasoline fraction (aromatic): C ₈ - C ₁₀ | 3 of 68 | 2.7 | Gasco |
| Dibenzofuran | 3 of 89 | 2.2 | Gasco |
| Beryllium | 3 of 93 | 2.0 | Willbridge |
| Isopropylbenzene | 10 of 136 | 2.0 | Siltronic |
| Nickel | 3 of 55 | 1.6 | Arkema chlorate plant area |
| 1,1-Dichloroethene | 2 of 136 | 1.6 | Siltronic |
| Copper | 1 of 45 | 1.3 | Rhône Poulenc |

| | | | |
|--------------------|-------------|------|----------------------------------|
| Phenanthrene | 145 of 1439 | 1500 | This line of evidence has no tab |
| Pyrene | 180 of 1439 | 860 | |
| Fluoranthene | 136 of 1439 | 540 | |
| Anthracene | 81 of 1439 | 460 | |
| Fluorene | 85 of 1439 | 410 | |
| Total PAH | 104 of 1439 | 320 | |
| Benzo(a)anthracene | 131 of 1439 | 300 | |
| Chrysene | 144 of 1439 | 290 | |
| Benzo(a)pyrene | 121 of 1439 | 230 | |

| | | |
|--------------------------|-------------|-----|
| Sum DDT's | 89 of 1154 | 210 |
| Naphthalene | 52 of 1440 | 180 |
| Sum DDD's | 119 of 1155 | 110 |
| Lead | 49 of 1392 | 100 |
| Lindane (γ -HCH) | 29 of 1107 | 86 |
| Sum DDE's | 52 of 1152 | 81 |
| Mercury | 3 of 1365 | 62 |
| Total PCB | 48 of 1163 | 46 |
| Total Chlordane | 43 of 1106 | 40 |
| Total DDx | 38 of 1155 | 28 |
| Copper | 66 of 1378 | 19 |
| Nickel | 30 of 1376 | 12 |
| Cadmium | 7 of 1382 | 9.3 |
| Chromium | 20 of 1378 | 7.0 |
| Zinc | 38 of 1392 | 6.2 |
| Heptachlor epoxide | 1 of 1107 | 6.2 |
| Dieldrin | 1 of 1107 | 5.8 |
| Arsenic | 8 of 1390 | 2.3 |

Not evaluated in BERA

| | | | |
|--------------------------|-------------|------|----------------------------------|
| Acenaphthene | 256 of 1439 | 4800 | This line of evidence has no tab |
| Phenanthrene | 256 of 1439 | 3300 | |
| Sum DDT's | 301 of 1154 | 2700 | |
| Anthracene | 156 of 1439 | 1600 | |
| Fluorene | 163 of 1439 | 1500 | |
| Pyrene | 266 of 1439 | 1500 | |
| Benzo(a)anthracene | 253 of 1439 | 830 | |
| Fluoranthene | 135 of 1439 | 510 | |
| Benzo(a)pyrene | 198 of 1439 | 430 | |
| Chrysene | 187 of 1439 | 430 | |
| Acenaphthylene | 111 of 1439 | 420 | |
| Sum DDE's | 142 of 1152 | 370 | |
| Sum DDD's | 250 of 1155 | 360 | |
| Lindane (γ -HCH) | 92 of 1107 | 310 | |
| 2-methylnaphthalene | 66 of 1369 | 260 | |
| Naphthalene | 66 of 1440 | 260 | |
| Dibenzo(a,h)anthracene | 167 of 1439 | 190 | |
| Lead | 76 of 1392 | 150 | |
| Mercury | 21 of 1365 | 130 | |
| Total Chlordane | 68 of 1106 | 79 | |

| | | |
|---------------------------|------------|-----|
| Dieldrin | 10 of 1107 | 53 |
| Heptachlor epoxide | 11 of 1107 | 36 |
| Nickel | 52 of 1376 | 17 |
| Copper | 49 of 1378 | 14 |
| Cadmium | 8 of 1382 | 13 |
| Chlordane (cis and trans) | 1 of 188 | 9.8 |
| Zinc | 80 of 1392 | 9.0 |
| Chromium | 30 of 1378 | 8.6 |
| Aroclor 1254 | 24 of 1154 | 6.5 |
| Arsenic | 17 of 1390 | 4.4 |
| Total DDx | 7 of 1155 | 3.6 |
| Endrin | 11 of 1107 | 3.2 |

Mistake in BERA Table 6-20, end

| | | |
|--------|----------|-----|
| Copper | 32 of 32 | 2.6 |
|--------|----------|-----|

| | | |
|-----------|------------|-----|
| Total PCB | 20 of 1100 | 20 |
| Total DDx | 13 of 1128 | 9.1 |

| | | | |
|--------------------------|-------------|------|----------------------------------|
| Phenanthrene | 145 of 1439 | 1500 | This line of evidence has no tab |
| Pyrene | 180 of 1439 | 860 | |
| Fluoranthene | 136 of 1439 | 540 | |
| Anthracene | 81 of 1439 | 460 | |
| Fluorene | 85 of 1439 | 410 | |
| Total PAH | 104 of 1439 | 320 | |
| Benzo(a)anthracene | 131 of 1439 | 300 | |
| Chrysene | 144 of 1439 | 290 | |
| Benzo(a)pyrene | 121 of 1439 | 230 | |
| Sum DDT's | 89 of 1154 | 210 | |
| Naphthalene | 52 of 1440 | 180 | |
| Sum DDD's | 119 of 1155 | 110 | |
| Lead | 49 of 1392 | 100 | |
| Lindane (γ -HCH) | 29 of 1107 | 86 | |
| Sum DDE's | 52 of 1152 | 81 | |
| Mercury | 3 of 1365 | 62 | |
| Total PCB | 48 of 1163 | 46 | |

| | | |
|--------------------|------------|-----|
| Total Chlordane | 43 of 1106 | 40 |
| Total DDx | 38 of 1155 | 28 |
| Copper | 66 of 1378 | 19 |
| Nickel | 30 of 1376 | 12 |
| Cadmium | 7 of 1382 | 9.3 |
| Chromium | 20 of 1378 | 7.0 |
| Zinc | 38 of 1392 | 6.2 |
| Heptachlor epoxide | 1 of 1107 | 6.2 |
| Dieldrin | 1 of 1107 | 5.8 |
| Arsenic | 8 of 1390 | 2.3 |

Not evaluated in BERA

| | | | |
|---------------------------|-------------|------|----------------------------------|
| Acenaphthene | 256 of 1439 | 4800 | This line of evidence has no tab |
| Phenanthrene | 256 of 1439 | 3300 | |
| Sum DDT's | 301 of 1154 | 2700 | |
| Anthracene | 156 of 1439 | 1600 | |
| Fluorene | 163 of 1439 | 1500 | |
| Pyrene | 266 of 1439 | 1500 | |
| Benzo(a)anthracene | 253 of 1439 | 830 | |
| Fluoranthene | 135 of 1439 | 510 | |
| Benzo(a)pyrene | 198 of 1439 | 430 | |
| Chrysene | 187 of 1439 | 430 | |
| Acenaphthylene | 111 of 1439 | 420 | |
| Sum DDE's | 142 of 1152 | 370 | |
| Sum DDD's | 250 of 1155 | 360 | |
| Lindane (γ -HCH) | 92 of 1107 | 310 | |
| 2-methylnaphthalene | 66 of 1369 | 260 | |
| Naphthalene | 66 of 1440 | 260 | |
| Dibenzo(a,h)anthracene | 167 of 1439 | 190 | |
| Lead | 76 of 1392 | 150 | |
| Mercury | 21 of 1365 | 130 | |
| Total Chlordane | 68 of 1106 | 79 | |
| Dieldrin | 10 of 1107 | 53 | |
| Heptachlor epoxide | 11 of 1107 | 36 | |
| Nickel | 52 of 1376 | 17 | |
| Copper | 49 of 1378 | 14 | |
| Cadmium | 8 of 1382 | 13 | |
| Chlordane (cis and trans) | 1 of 188 | 9.8 | |

| | | | |
|--------------|------------|-----|---------------------------------|
| Zinc | 80 of 1392 | 9.0 | |
| Chromium | 30 of 1378 | 8.6 | |
| Aroclor 1254 | 24 of 1154 | 6.5 | |
| Arsenic | 17 of 1390 | 4.4 | |
| Total DDx | 7 of 1155 | 3.6 | |
| Endrin | 11 of 1107 | 3.2 | Mistake in BERA Table 6-20, end |

| | | | |
|----------------------------|----------------------|-------------|--|
| Naphthalene | 10 of 268 | 50 | River mile 5.5 to 6.5 |
| Total DDx | 35 of 170 (1 of 170) | 20 (1.8) | River mile 1.5 to 2.5, river mile 5.5 to 9.5 |
| Benzo(a)pyrene | 3 of 245 | 14 | River mile 5.5 to 6.5 |
| Benzo(a)anthracene | 2 of 245 | 10 | River mile 5.5 to 6.5 |
| 4,4'-DDT | 19 of 170 (0 of 170) | 4.7 (0.43) | River mile 5.5 to 9.5 |
| Trichloroethene | 1 of 23 | 4.1 | River mile 6.5 to 7.5 |
| bis(2-ethylhexyl)phthalate | 2 of 190 | 2.3 | River mile 3.5 to 4.5 |
| Ethylbenzene | 1 of 23 | 1.6 | River mile 6.5 to 7.5 |
| Monobutyltin | 1 of 167 | 1.2 | River mile 10.5 to 11.8 |
| Total PCB | 2 of 160 (0 of 160) | 1.2 (0.089) | River mile 6.5 to 7.5 |
| Zinc | 1 of 167 | 1.1 | River mile 9.5 to 10.5 |

| | | | |
|--|------------|------------|----------------------------|
| Cyanide | 34 of 34 | 4400 | Gasco |
| Total DDx | 10 of 14 | 3100 (280) | Arkema acid plant area |
| Benzo(a)pyrene | 34 of 102 | 2700 | Siltronic |
| Trichloroethene | 2 of 136 | 1900 | Siltronic |
| 4,4'-DDT | 3 of 14 | 1800 (160) | Arkema acid plant area |
| 4,4'-DDD | 6 of 14 | 1300 | Arkema acid plant area |
| Benzo(a)anthracene | 31 of 102 | 1200 | Siltronic |
| Barium | 93 of 93 | 1100 | Arkema chlorate plant area |
| Naphthalene | 31 of 149 | 1100 | Siltronic |
| 2,4-DDD | 10 of 14 | 1100 | Arkema acid plant area |
| Carbon disulfide | 4 of 136 | 870 | Gasco |
| Manganese | 105 of 106 | 550 | Arkema chlorate plant area |
| Gasoline fraction (aliphatic): C ₁₀ - C ₁₂ | 36 of 68 | 540 | Gasco |
| Iron | 101 of 106 | 250 | Arkema chlorate plant area |
| Chlorobenzene | 3 of 136 | 190 | Arkema acid plant area |
| 4,4'-DDE | 3 of 14 | 120 | Arkema acid plant area |
| cis-1,2-Dichloroethene | 5 of 136 | 110 | Siltronic |
| 2,4-DDT | 3 of 14 | 93 | Arkema acid plant area |
| Anthracene | 28 of 102 | 87 | Siltronic |
| Benzo(g,h,i)perylene | 13 of 102 | 66 | Siltronic |
| Indeno(1,2,3-cd)pyrene | 13 of 102 | 61 | Siltronic |
| Phenanthrene | 36 of 102 | 57 | Siltronic |
| Ethylbenzene | 15 of 136 | 57 | Siltronic |

| | | | |
|--|----------------------|----------|--|
| Sodium | 11 of 93 | 55 | Arkema chlorate plant area |
| Benzo(b)fluoranthene | 13 of 102 | 49 | Siltronic |
| 1,2-Dichlorobenzene | 5 of 136 | 46 | Rhône Poulenc |
| 2-methylnaphthalene | 11 of 89 | 40 | Gasco |
| Total xylenes | 13 of 136 | 34 | Siltronic |
| Benzene | 9 of 136 | 30 | Siltronic |
| Fluorene | 36 of 102 | 28 | Siltronic |
| Chloroform | 4 of 136 | 21 | Arkema acid plant area |
| Vanadium | 6 of 13 | 19 | Siltronic |
| Perchlorate | 5 of 21 | 19 | Arkema chlorate plant area |
| Toluene | 11 of 136 | 18 | Siltronic |
| Acenaphthene | 24 of 102 | 17 | Siltronic |
| Chrysene | 10 of 102 | 17 | Siltronic |
| Fluoranthene | 11 of 102 | 17 | Siltronic |
| 1,4-Dichlorobenzene | 2 of 128 | 16 | Rhône Poulenc |
| Pyrene | 11 of 102 | 15 | Siltronic |
| Zinc | 1 of 55 | 14 | ARCO |
| Benzo(k)fluoranthene | 10 of 102 | 14 | Siltronic |
| Dibenzo(a,h)anthracene | 8 of 102 | 13 | Siltronic |
| o-Xylene | 12 of 136 | 12 | Siltronic |
| 1,2,4-Trimethylbenzene | 11 of 41 | 9.6 | Siltronic |
| Gasoline fraction (aliphatic): C ₄ - C ₆ | 15 of 68 | 7.3 | Gasco |
| Magnesium | 8 of 106 | 7.0 | Arkema acid plant area |
| Cadmium | 10 of 55 | 5.8 | Rhône Poulenc |
| m,p-Xylene | 3 of 136 | 4.4 | Siltronic |
| Gasoline fraction (aliphatic): C ₆ - C ₈ | 7 of 62 | 4.3 | Gasco |
| Potassium | 2 of 93 | 3.7 | Arkema chlorate plant area |
| Cobalt | 3 of 13 | 3.6 | Siltronic |
| Chloroethane | 1 of 136 | 3.4 | Gunderson |
| Lead | 4 of 55 | 3.0 | Mobil Oil |
| 1,3,5-Trimethylbenzene | 5 of 41 | 3.0 | Siltronic |
| Gasoline fraction (aromatic): C ₈ - C ₁₀ | 3 of 68 | 2.7 | Gasco |
| Dibenzofuran | 3 of 89 | 2.2 | Gasco |
| Beryllium | 3 of 93 | 2.0 | Willbridge |
| Isopropylbenzene | 10 of 136 | 2.0 | Siltronic |
| Nickel | 3 of 55 | 1.6 | Arkema chlorate plant area |
| 1,1-Dichloroethene | 2 of 136 | 1.6 | Siltronic |
| Copper | 1 of 45 | 1.3 | Rhône Poulenc |
| | | | |
| Naphthalene | 10 of 268 | 50 | River mile 5.5 to 6.5 |
| | | | |
| Total DDx | 35 of 170 (1 of 170) | 20 (1.8) | River mile 1.5 to 2.5, river mile 5.5 to 9.5 |
| Benzo(a)pyrene | 3 of 245 | 14 | River mile 5.5 to 6.5 |
| Benzo(a)anthracene | 2 of 245 | 10 | River mile 5.5 to 6.5 |

| | | | |
|----------------------------|----------------------|-------------|-------------------------|
| 4,4'-DDT | 19 of 170 (0 of 170) | 4.7 (0.43) | River mile 5.5 to 9.5 |
| Trichloroethene | 1 of 23 | 4.1 | River mile 6.5 to 7.5 |
| bis(2-ethylhexyl)phthalate | 2 of 190 | 2.3 | River mile 3.5 to 4.5 |
| Ethylbenzene | 1 of 23 | 1.6 | River mile 6.5 to 7.5 |
| Monobutyltin | 1 of 167 | 1.2 | River mile 10.5 to 11.8 |
| Total PCB | 2 of 160 (0 of 160) | 1.2 (0.089) | River mile 6.5 to 7.5 |
| Zinc | 1 of 167 | 1.1 | River mile 9.5 to 10.5 |

| | | | |
|--|------------|------------|----------------------------|
| Cyanide | 34 of 34 | 4400 | Gasco |
| Total DDx | 10 of 14 | 3100 (280) | Arkema acid plant area |
| Benzo(a)pyrene | 34 of 102 | 2700 | Siltronic |
| Trichloroethene | 2 of 136 | 1900 | Siltronic |
| 4,4'-DDT | 3 of 14 | 1800 (160) | Arkema acid plant area |
| 4,4'-DDD | 6 of 14 | 1300 | Arkema acid plant area |
| Benzo(a)anthracene | 31 of 102 | 1200 | Siltronic |
| Barium | 93 of 93 | 1100 | Arkema chlorate plant area |
| Naphthalene | 31 of 149 | 1100 | Siltronic |
| 2,4-DDD | 10 of 14 | 1100 | Arkema acid plant area |
| Carbon disulfide | 4 of 136 | 870 | Gasco |
| Manganese | 105 of 106 | 550 | Arkema chlorate plant area |
| Gasoline fraction (aliphatic): C ₁₀ - C ₁₂ | 36 of 68 | 540 | Gasco |
| Iron | 101 of 106 | 250 | Arkema chlorate plant area |
| Chlorobenzene | 3 of 136 | 190 | Arkema acid plant area |
| 4,4'-DDE | 3 of 14 | 120 | Arkema acid plant area |
| cis-1,2-Dichloroethene | 5 of 136 | 110 | Siltronic |
| 2,4-DDT | 3 of 14 | 93 | Arkema acid plant area |
| Anthracene | 28 of 102 | 87 | Siltronic |
| Benzo(g,h,i)perylene | 13 of 102 | 66 | Siltronic |
| Indeno(1,2,3-cd)pyrene | 13 of 102 | 61 | Siltronic |
| Phenanthrene | 36 of 102 | 57 | Siltronic |
| Ethylbenzene | 15 of 136 | 57 | Siltronic |
| Sodium | 11 of 93 | 55 | Arkema chlorate plant area |
| Benzo(b)fluoranthene | 13 of 102 | 49 | Siltronic |
| 1,2-Dichlorobenzene | 5 of 136 | 46 | Rhône Poulenc |
| 2-methylnaphthalene | 11 of 89 | 40 | Gasco |
| Total xylenes | 13 of 136 | 34 | Siltronic |
| Benzene | 9 of 136 | 30 | Siltronic |
| Fluorene | 36 of 102 | 28 | Siltronic |
| Chloroform | 4 of 136 | 21 | Arkema acid plant area |
| Vanadium | 6 of 13 | 19 | Siltronic |
| Perchlorate | 5 of 21 | 19 | Arkema chlorate plant area |
| Toluene | 11 of 136 | 18 | Siltronic |

| | | | |
|--|------------|-----|--------------------------------|
| Acenaphthene | 24 of 102 | 17 | Siltronic |
| Chrysene | 10 of 102 | 17 | Siltronic |
| Fluoranthene | 11 of 102 | 17 | Siltronic |
| 1,4-Dichlorobenzene | 2 of 128 | 16 | Rhône Poulenc |
| Pyrene | 11 of 102 | 15 | Siltronic |
| Zinc | 1 of 55 | 14 | ARCO |
| Benzo(k)fluoranthene | 10 of 102 | 14 | Siltronic |
| Dibenz(a,h)anthracene | 8 of 102 | 13 | Siltronic |
| o-Xylene | 12 of 136 | 12 | Siltronic |
| 1,2,4-Trimethylbenzene | 11 of 41 | 9.6 | Siltronic |
| Gasoline fraction (aliphatic): C ₄ - C ₆ | 15 of 68 | 7.3 | Gasco |
| Magnesium | 8 of 106 | 7.0 | Arkema acid plant area |
| Cadmium | 10 of 55 | 5.8 | Rhône Poulenc |
| m,p-Xylene | 3 of 136 | 4.4 | Siltronic |
| Gasoline fraction (aliphatic): C ₆ - C ₈ | 7 of 62 | 4.3 | Gasco |
| Potassium | 2 of 93 | 3.7 | Arkema chlorate plant area |
| Cobalt | 3 of 13 | 3.6 | Siltronic |
| Chloroethane | 1 of 136 | 3.4 | Gunderson |
| Lead | 4 of 55 | 3.0 | Mobil Oil |
| 1,3,5-Trimethylbenzene | 5 of 41 | 3.0 | Siltronic |
| Gasoline fraction (aromatic): C ₈ - C ₁₀ | 3 of 68 | 2.7 | Gasco |
| Dibenzofuran | 3 of 89 | 2.2 | Gasco |
| Beryllium | 3 of 93 | 2.0 | Willbridge |
| Isopropylbenzene | 10 of 136 | 2.0 | Siltronic |
| Nickel | 3 of 55 | 1.6 | Arkema chlorate plant area |
| 1,1-Dichloroethene | 2 of 136 | 1.6 | Siltronic |
| Copper | 1 of 45 | 1.3 | Rhône Poulenc |
| | | | |
| Total PCB (Sculpin) | 4 of 38 | 9.4 | |
| bis(2-ethylhexyl)phthalate (Sculpin) | 1 of 38 | 2.9 | TRV incorrect in BERA. Need to |
| Lead (Peamouth) | 1 of 4 | 2.7 | |
| Copper (Sculpin) | 3 of 38 | 2.3 | |
| Total DDx (Sculpin) | 1 of 38 | 1.9 | TRV incorrect in BERA. Need to |
| | | | |
| Total PCB (Sculpin) | 90 of 1100 | 110 | |
| Total DDx (Sculpin) | 29 of 1128 | 21 | TRV incorrect in BERA. Need to |
| | | | |
| Copper (Sculpin) | 1 of 35 | 3.6 | |
| Cadmium (Juvenile Chinook salmon) | 35 of 35 | 3.5 | Sitewide |

| | | | |
|----------------------------------|----------------------|---|--|
| Copper (Juvenile Chinook salmon) | 35 of 35 | 2.5 | Sitewide |
| Cadmium (Sculpin) | 2 of 35 | 2.2 | |
| Copper (Peachmouth) | 1 of 4 | 1.0 | |
| None | 0 of 5 | NA | |
| Naphthalene | 10 of 268 | 50 | River mile 5.5 to 6.5 |
| Total DDx | 35 of 170 (1 of 170) | 20 (1.8) | River mile 1.5 to 2.5, river mile 5.5 to 9.5 |
| Benzo(a)pyrene | 3 of 245 | 14 | River mile 5.5 to 6.5 |
| Benzo(a)anthracene | 2 of 245 | 10 | River mile 5.5 to 6.5 |
| 4,4'-DDT | 19 of 170 (0 of 170) | 4.7 (0.43) | River mile 5.5 to 9.5 |
| Trichloroethene | 1 of 23 | 4.1 | River mile 6.5 to 7.5 |
| bis(2-ethylhexyl)phthalate | 2 of 190 | 2.3 | River mile 3.5 to 4.5 |
| Ethylbenzene | 1 of 23 | 1.6 | River mile 6.5 to 7.5 |
| Monobutyltin | 1 of 167 | 1.2 | River mile 10.5 to 11.8 |
| Total PCB | 2 of 160 (0 of 160) | 1.2 (0.089) | River mile 6.5 to 7.5 |
| Zinc | 1 of 167 | 1.1 | River mile 9.5 to 10.5 |
| Total PCB (Largescale sucker) | 2 of 6 | 2.2 | Total DDx TRV incorrect in BERA |
| None | 0 of 15 | Check this. Result sounds fishy given maximum total PCB in carp tissue of 25.1 mg/kg in a composite from river mile 4 - 8. I didn't see a TEQ for fish calculation in the BERA database, but found one for birds and mammals eating carp, making me think they should be able to calculate one for carp itself. | |
| Copper (White sturgeon) | 1 of 1 | 1.3 | Sitewide |
| Copper (Largescale sucker) | 1 of 1 | 1.1 | Sitewide |

| | | | |
|--|--|-------------|---|
| | 423 of 1406 (using threshold sediment value of 2731 µg/kg total PAH for increase in any lesion prevalence from Stern et al. (2003) | | |
| Total PAH | | 2700 | |
| Naphthalene | 10 of 268 | 50 | River mile 5.5 to 6.5 River mile 1.5 to 2.5, river mile 5.5 to 9.5 |
| Total DDx | 35 of 170 (1 of 170) | 20 (1.8) | River mile 5.5 to 6.5 |
| Benzo(a)pyrene | 3 of 245 | 14 | River mile 5.5 to 6.5 |
| Benzo(a)anthracene | 2 of 245 | 10 | River mile 5.5 to 6.5 |
| 4,4'-DDT | 19 of 170 (0 of 170) | 4.7 (0.43) | River mile 5.5 to 9.5 |
| Trichloroethene | 1 of 23 | 4.1 | River mile 6.5 to 7.5 |
| bis(2-ethylhexyl)phthalate | 2 of 190 | 2.3 | River mile 3.5 to 4.5 |
| Ethylbenzene | 1 of 23 | 1.6 | River mile 6.5 to 7.5 |
| Monobutyltin | 1 of 167 | 1.2 | River mile 10.5 to 11.8 |
| Total PCB | 2 of 160 (0 of 160) | 1.2 (0.089) | River mile 6.5 to 7.5 |
| Zinc | 1 of 167 | 1.1 | River mile 9.5 to 10.5 |
| Lead (Smallmouth bass) | 2 of 32 | 280 | Total DDx TRV incorrect in BERA |
| bis(2-ethylhexyl)phthalate (Smallmouth bass) | 2 of 32 | 9.1 | TRV incorrect in BERA. Need to |
| Total PCB (Smallmouth bass) | 9 of 32 | 7.1 | |
| Antimony (Smallmouth bass) | 1 of 32 | 5.4 | |
| Total PCB (Northern pikeminnow) | 2 of 6 | 2.0 | |

Can't find this anywhere in BERA. Could estimate from food web model. Have LWG calculate these.

| | | | |
|------------------------------|----------------------|------------|---|
| Copper (Northern pikeminnow) | 2 of 11 | 1.5 | Swan Island Lagoon, River mile 10.5 to 11.8 |
| Naphthalene | 10 of 268 | 50 | River mile 5.5 to 6.5 River mile 1.5 to 2.5, river mile 5.5 to 9.5 |
| Total DDx | 35 of 170 (1 of 170) | 20 (1.8) | River mile 5.5 to 6.5 |
| Benzo(a)pyrene | 3 of 245 | 14 | River mile 5.5 to 6.5 |
| Benzo(a)anthracene | 2 of 245 | 10 | River mile 5.5 to 6.5 |
| 4,4'-DDT | 19 of 170 (0 of 170) | 4.7 (0.43) | River mile 5.5 to 9.5 |
| Trichloroethene | 1 of 23 | 4.1 | River mile 6.5 to 7.5 |
| bis(2-ethylhexyl)phthalate | 2 of 190 | 2.3 | River mile 3.5 to 4.5 |

| | | | |
|--|---------------------|-------------|----------------------------|
| Ethylbenzene | 1 of 23 | 1.6 | River mile 6.5 to 7.5 |
| Monobutyltin | 1 of 167 | 1.2 | River mile 10.5 to 11.8 |
| Total PCB | 2 of 160 (0 of 160) | 1.2 (0.089) | River mile 6.5 to 7.5 |
| Zinc | 1 of 167 | 1.1 | River mile 9.5 to 10.5 |
| | | | |
| Cyanide | 34 of 34 | 4400 | Gasco |
| Total DDx | 10 of 14 | 3100 (280) | Arkema acid plant area |
| Benzo(a)pyrene | 34 of 102 | 2700 | Siltronic |
| Trichloroethene | 2 of 136 | 1900 | Siltronic |
| 4,4'-DDT | 3 of 14 | 1800 (160) | Arkema acid plant area |
| 4,4'-DDD | 6 of 14 | 1300 | Arkema acid plant area |
| Benzo(a)anthracene | 31 of 102 | 1200 | Siltronic |
| Barium | 93 of 93 | 1100 | Arkema chlorate plant area |
| Naphthalene | 31 of 149 | 1100 | Siltronic |
| 2,4-DDD | 10 of 14 | 1100 | Arkema acid plant area |
| Carbon disulfide | 4 of 136 | 870 | Gasco |
| Manganese | 105 of 106 | 550 | Arkema chlorate plant area |
| Gasoline fraction (aliphatic): C ₁₀ - C ₁₂ | 36 of 68 | 540 | Gasco |
| Iron | 101 of 106 | 250 | Arkema chlorate plant area |
| Chlorobenzene | 3 of 136 | 190 | Arkema acid plant area |
| 4,4'-DDE | 3 of 14 | 120 | Arkema acid plant area |
| cis-1,2-Dichloroethene | 5 of 136 | 110 | Siltronic |
| 2,4-DDT | 3 of 14 | 93 | Arkema acid plant area |
| Anthracene | 28 of 102 | 87 | Siltronic |
| Benzo(g,h,i)perylene | 13 of 102 | 66 | Siltronic |
| Indeno(1,2,3-cd)pyrene | 13 of 102 | 61 | Siltronic |
| Phenanthrene | 36 of 102 | 57 | Siltronic |
| Ethylbenzene | 15 of 136 | 57 | Siltronic |
| Sodium | 11 of 93 | 55 | Arkema chlorate plant area |
| Benzo(b)fluoranthene | 13 of 102 | 49 | Siltronic |
| 1,2-Dichlorobenzene | 5 of 136 | 46 | Rhône Poulenc |
| 2-methylnaphthalene | 11 of 89 | 40 | Gasco |
| Total xylenes | 13 of 136 | 34 | Siltronic |
| Benzene | 9 of 136 | 30 | Siltronic |
| Fluorene | 36 of 102 | 28 | Siltronic |
| Chloroform | 4 of 136 | 21 | Arkema acid plant area |
| Vanadium | 6 of 13 | 19 | Siltronic |
| Perchlorate | 5 of 21 | 19 | Arkema chlorate plant area |
| Toluene | 11 of 136 | 18 | Siltronic |
| Acenaphthene | 24 of 102 | 17 | Siltronic |
| Chrysene | 10 of 102 | 17 | Siltronic |
| Fluoranthene | 11 of 102 | 17 | Siltronic |
| 1,4-Dichlorobenzene | 2 of 128 | 16 | Rhône Poulenc |
| Pyrene | 11 of 102 | 15 | Siltronic |

| | | | |
|--|-----------|-----|----------------------------|
| Zinc | 1 of 55 | 14 | ARCO |
| Benzo(k)fluoranthene | 10 of 102 | 14 | Siltronic |
| Dibenzo(a,h)anthracene | 8 of 102 | 13 | Siltronic |
| o-Xylene | 12 of 136 | 12 | Siltronic |
| 1,2,4-Trimethylbenzene | 11 of 41 | 9.6 | Siltronic |
| Gasoline fraction (aliphatic): C ₄ - C ₆ | 15 of 68 | 7.3 | Gasco |
| Magnesium | 8 of 106 | 7.0 | Arkema acid plant area |
| Cadmium | 10 of 55 | 5.8 | Rhône Poulenc |
| m,p-Xylene | 3 of 136 | 4.4 | Siltronic |
| Gasoline fraction (aliphatic): C ₆ - C ₈ | 7 of 62 | 4.3 | Gasco |
| Potassium | 2 of 93 | 3.7 | Arkema chlorate plant area |
| Cobalt | 3 of 13 | 3.6 | Siltronic |
| Chloroethane | 1 of 136 | 3.4 | Gunderson |
| Lead | 4 of 55 | 3.0 | Mobil Oil |
| 1,3,5-Trimethylbenzene | 5 of 41 | 3.0 | Siltronic |
| Gasoline fraction (aromatic): C ₈ - C ₁₀ | 3 of 68 | 2.7 | Gasco |
| Dibenzofuran | 3 of 89 | 2.2 | Gasco |
| Beryllium | 3 of 93 | 2.0 | Willbridge |
| Isopropylbenzene | 10 of 136 | 2.0 | Siltronic |
| Nickel | 3 of 55 | 1.6 | Arkema chlorate plant area |
| 1,1-Dichloroethene | 2 of 136 | 1.6 | Siltronic |
| Copper | 1 of 45 | 1.3 | Rhône Poulenc |

Results presented in Table 11-? (results don't fit in this format). Survival of ammocoetes in 96 hour LC₅₀ tests recorded.

| | | | |
|----------------------------|----------|------------|---|
| | NA | NA | NA |
| Copper | 4 of 4 | 2.2 | River mile 2.2 to 8.8 |
| Naphthalene | 1 of 159 | 50 | River mile 5.5 to 6.5 River mile 1.5 to 2.5, river |
| Total DDx | 1 of 121 | 20 (1.8) | mile 5.5 to 9.5 |
| Benzo(a)pyrene | 3 of 158 | 14 | River mile 5.5 to 6.5 |
| Benzo(a)anthracene | 2 of 158 | 10 | River mile 5.5 to 6.5 |
| Trichloroethene | 1 of 23 | 4.1 | River mile 6.5 to 7.5 |
| 4,4'-DDT | 1 of 121 | 3.9 (0.35) | River mile 5.5 to 9.5 |
| Ethylbenzene | 1 of 23 | 1.6 | River mile 6.5 to 7.5 |
| bis(2-ethylhexyl)phthalate | 1 of 129 | 1.2 | River mile 3.5 to 4.5 |
| Zinc | 1 of 117 | 1.1 | River mile 9.5 to 10.5 |

| | | | |
|--|-------------------|------------|------------------------|
| Total DDx | 8 of 12 (8 of 12) | 3100 (280) | Arkema acid plant area |
| 4,4'-DDT | 3 of 12 (3 of 12) | 1800 (160) | Arkema acid plant area |
| Barium | 49 of 49 | 1100 | |
| Carbon disulfide | 1 of 56 | 870 | |
| Manganese | 49 of 49 | 550 | |
| Iron | 46 of 49 | 250 | |
| Chlorobenzene | 2 of 56 | 190 | |
| Gasoline fraction (aliphatic): C ₁₀ - C ₁₂ | 12 of 22 | 100 | |
| Naphthalene | 5 of 72 | 57 | |
| Sodium | 9 of 49 | 55 | |
| Cyanide | 1 of 2 | 23 | |
| Chloroform | 2 of 56 | 21 | |
| Perchlorate | 3 of 17 | 19 | |
| Benzo(a)pyrene | 8 of 37 | 15 | |
| Zinc | 1 of 30 | 14 | |
| Benzo(a)anthracene | 9 of 37 | 8.5 | |
| Magnesium | 6 of 49 | 7.0 | |
| Cadmium | 6 of 30 | 5.8 | |
| Phenanthrene | 7 of 37 | 4.6 | |
| Fluorene | 6 of 37 | 4.6 | |
| Ethylbenzene | 1 of 56 | 4.5 | |
| Potassium | 2 of 49 | 3.7 | |
| Anthracene | 3 of 37 | 3.6 | |
| Chloroethane | 1 of 56 | 3.4 | |
| 2-methylnaphthalene | 3 of 37 | 3.4 | |
| Acenaphthene | 2 of 37 | 3.3 | |
| Lead | 2 of 30 | 3.0 | |
| Toluene | 1 of 56 | 2.9 | |
| 1,2,4-Trimethylbenzene | 1 of 5 | 2.0 | |
| 1,2-Dichlorobenzene | 1 of 56 | 1.9 | |
| Nickel | 2 of 30 | 1.6 | |
| Isopropylbenzene | 1 of 56 | 1.3 | |
| Gasoline fraction (aliphatic): C ₄ - C ₆ | 2 of 22 | 1.3 | |
| Copper | 1 of 22 | 1.3 | |
| | | | |
| Lead | 1 of 11 | 7.8 | |
| Total PCB | 1 of 11 | 1.1 | |
| | | | |
| Total PCB | 11 of 11 | 3.9 | |
| Mercury | 11 of 11 | 1.7 | |

| | | |
|------------------------|----------|-----|
| Total PCB | 2 of 5 | 4.4 |
| Total TEQ | 5 of 5 | 3.8 |
| Total PCB TEQ | 4 of 5 | 3.2 |
| Total dioxin/furan TEQ | 1 of 5 | 1.8 |
| | | |
| Total TEQ | 5 of 5 | 53 |
| Total PCB TEQ | 5 of 5 | 44 |
| Total dioxin/furan TEQ | 5 of 5 | 25 |
| Total PCB | 4 of 5 | 6.6 |
| 4,4'-DDE | 2 of 5 | 1.9 |
| | | |
| Total PCB | 3 of 11 | 3.8 |
| | | |
| Total TEQ | 4 of 8 | 20 |
| Total dioxin/furan TEQ | 1 of 8 | 17 |
| Total PCB | 5 of 8 | 12 |
| Total PCB TEQ | 2 of 8 | 11 |
| Aldrin | 1 of 8 | 1.7 |
| Benzo(a)pyrene | 1 of 8 | 1.6 |
| Dibutyl phthalate | 1 of 8 | 1.4 |
| Total DDx | 1 of 8 | 1.4 |
| Copper | 3 of 8 | 1.3 |
| Sum DDE | 1 of 8 | 1.3 |
| | | |
| Total PCB | 11 of 11 | 33 |
| Total TEQ | 11 of 11 | 12 |
| Lead | 1 of 11 | 4.0 |
| Total PCB TEQ | 11 of 11 | 2.4 |
| Total dioxin/furan TEQ | 1 of 11 | 2.0 |
| Aluminum | 11 of 11 | 1.6 |
| | | |
| Total PCB | 4 of 4 | 31 |
| Total TEQ | 4 of 4 | 2.3 |
| Total PCB TEQ | 2 of 4 | 1.5 |

Aquatic plant surface water TRVs should be all chemicals in any surface water sample with HQ > 1. BERA ignores pH

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

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Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

Maximum Corbicula mortality was 2.3% greater than control survival, no significant toxicity as per p. 147-149 of BE

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

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Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

Discussion on page 365 of main text, and in attachment 12. PAH in prey concentrations screened out, not a COC.

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

Carp, bullhead and black crappie would have several COCs, including total PCB, if evaluated the same as other fish. P

Text discussion starts on p 472 of BERA. Willamette River white sturgeon lesion incidence marginally higher (55%) t

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

Missing from BERA. Can be calculated for total PCB, total DDx, possibly PCB and dioxin/furan TEQs

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

96 hr LC50s: PCP - 31, Cu - 46,
aniline - 430,000, diazinon -
8900, naphthalene - 10,000,
lindane - >2680, all µg/L

Total DDx TRV incorrect in BERA. Need to recalculate with correct TRV (0.68 mg/kg total DDx as per EPA's Sept 9, 2

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

Values in () are from LWG derived TRVs. Need footnote at end of table saying this.

RA

ull in HQs from uncertainty or our own calculations?

hat found in Columbia River (25 - 46%) white sturgeon. Semi-quantitative measurement endpoint, cannot definitiv

008 guidance to LWG

ely be linked to effects on survival, reproduction or growth.